

REMARKS

Applicants respectfully traverse and request reconsideration.

Claims 16 and 60 are objected to as being substantial duplicates of claims 2 and 59 respectively. Applicants have deleted claim 16. However, Applicants respectfully note that claims 59 and 61 have differences with respect to the encapsulating material as claim 59 requires, among other things, “a metal cap” whereas claim 61 does not require such an encapsulation structure and as such, these claim different structures.

Claims 7 and 59 have been objected to due to informalities. These informalities have been corrected.

Claims 2, 5, 6, 8, 9, 12, 13, 16, 41, 44-48, 56 and 58-61 stand rejected under 35 U.S.C. §102(e) as being anticipated by U.S. Patent No. 6,294,731 (Lu et al.). The Lu reference is directed to an apparatus for multi-chip packaging that among other things, utilizes thermal conductive shims on top of packaged semiconductors.

In contrast, claims 56, 57, 58, 59 and 61, for example require, among other things, that the “planar top surface of the encapsulated structure and the top surface of the packaged semiconductor die are of equal distance from the substrate”. As such, the claim requires that both the planar top surface of the encapsulated structure which encapsulates an unpackaged semiconductor die and a top surface of the package semiconductor die are of equal distance from the substrate. The office action cites FIG. 7 of the Lu reference which actually shows an opposite structure. The packaged die of Lu, which apparently is shown between two unpackaged die, actually shows the top surface of the packaged semiconductor die, well below the top surface of the encapsulated structure that encapsulates any unpackaged semiconductor die and actually requires the use of a thermal conductive shim 120. As such, the reference does not anticipate Applicants’ claimed invention and the claims are in condition for allowance.

The dependent claims are all likewise allowable and in addition, the dependent claims add additional novel and non-obvious subject matter.

Claims 3, 4, 7, 17, 18, 20, 24, 25, 53, 54 and 57 stand rejected under 35 U.S.C. §103(a) as being unpatentable over Lu et al. in view of the Hannah '232 patent. Applicants respectfully submit that the dependent claims add additional novel and non-obvious subject matter and are also allowable over Lu for the reasons given above. Accordingly, these claims are also in condition for allowance.

Claim 11 stands rejected under 35 U.S.C. §103(a) as being unpatentable over Lu et al. in view of Takano et al. '907. Applicants respectfully submit that the claim is in condition for allowance at least for depending upon an allowable base claim.

Claim 23 stands rejected under 35 U.S.C. §103(a) as being unpatentable over Lu et al. and Hannah as applied to claim 57 and further in view of Takano et al. Applicants respectfully reassert the relevant remarks made above and as such, this claim is also in condition for allowance.

Applicants respectfully submit that the claims are in condition for allowance, and an early Notice of Allowance is earnestly solicited. The Examiner is invited to telephone the below-listed attorney if the Examiner believes that a telephone conference will expedite the prosecution of the application.

Respectfully submitted,

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